

PRODUCT INFORMATION FOR THE BUILDING CERTIFICATION SCHEME HQE (Haute Qualité Environnementale)

The intention of this document is to support project teams pursuing HQE certification by providing an overview of how your products contribute to HQE credits. Basis for this information is the HQE system¹

The Haute Qualité Environnementale or HQE (High Quality Environmental standard) is a standard for green building in France. It is controlled by the Association pour la Haute Qualité Environnementale (ASSOHQE).

For 14 criteria, indicators and requirements are used to address both, the management of impacts on the outdoor environment as well as creating a pleasant indoor environment: Harmonious relationship between buildings and their immediate environment; Integrated choice of construction methods and materials; The avoidance of nuisance by the construction site; Minimizing energy use; Minimizing water use; Minimizing waste in operations; Minimizing building maintenance and repair; Hydrothermal control measures; Acoustic control measures; Visual attractiveness; Measures to control smells; Hygiene and cleanliness of the indoor spaces; Air quality controls; Water quality controls.

Armaflex

General Information

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Product information

Product description

This fact sheets covers six product brands of the product family Armaflex: NH/Armaflex, SH/Armaflex, HT/Armaflex, Armaflex Ultima, AF/Armaflex, AF/Armaflex Class O

Armaflex products are the professional, highly-flexible, closed-cell elastomeric foam insulation (FEF) for continuous energy saving and condensation control purposes. The combination of very low thermal conductivity and extremely high resistance to water vapour transmission prevents long-term energy losses and water vapour ingress and reduces the risk of corrosion under insulation.

Application

Armaflex is used to insulate pipes, air ducts and vessels including fittings and flanges of industrial installations and building equipment.

¹ HQE "Référentiel pour la qualité environnementale des Bâtiments" (NF 380, version 20/04/2015)

Technical data

Product brand	Water vapour diffusion resistance	Thermal conductivity	Maximum service temperature	Minimum service temperature	Reaction to fire
Standard/Unit	EN 12088 [-]	[W/mK]	EN 14706/7 [°C]	EN 14706/7 [°C]	EN 135001-1 [-]
NH/Armaflex	≥ 2000	0.040 (0 °C)	+110	-50	Tubes: D _L -s3, d0/ Sheets: E
SH/Armaflex		0.036/0.040 (40 °C)	+110	-50	Tubes: B _L -s3, d0/ C _L -s3, d0 Sheets: C-s3, d0/ D-s3, d0
HT/Armaflex	≥ 4000 / ≥ 3000	0.042 / 0.045 (40 °C)	+110	-50	Tubes: D _L -s3, d0/ Sheets: D-s3, d0
Armaflex Ultima	7000	0.040 (0 °C)	+110	-50	Tubes: B _L -s1, d0/ Sheets: B-s2, d0
AF/Armaflex	≥ 10000 / ≥ 7000	0.033 / 0.036 (0 °C)	+110	-50	Tubes: B _L -s3, d0/ Sheets: B-s3, d0
AF/Armaflex Class O	≥ 10000 / ≥ 7000	0.033 / 0.036 (0 °C)	+110	-50	Tubes: B _L -s3, d0/ Sheets: B-s3, d0

HQE Cible n° 2: Integrated choice of construction materials, systems and processes

2.3.1: Knowledge of the environmental impacts of the product

Product declarations

Item	Value
Critically reviewed LCA acc. to ISO 14044?	yes
Reviewer	Institute Construction and Environment (IBU - Institut Bauen und Umwelt e.V.), Berlin, Germany
Industry-wide (generic) EPD (Type III, including external verification)?	no
Product specific EPD (Type III, including external verification)?	yes
EPD program operator	Institute Construction and Environment (IBU - Institut Bauen und Umwelt e.V.), Berlin, Germany; www.construction-environment.com
EPD program operator country	Germany
EPD numbers	NH/Armaflex - EPD-ARM-20150106-IBB1-DE SH/Armaflex – EPD-ARM-20150107-IBB1-DE HT/Armaflex – EPD-ARM-20150108-IBB1-DE Armaflex Ultima – EPD-ARM-20150109-IBB1-DE AF/Armaflex – EPD-ARM-20150060-IBB1-DE AF/Armaflex Class O – EPD-ARM-2015-0110-IBB1-DE NH/Armaflex - EPD-ARM-20150106-IBB1-DE
Declared unit	1 m ³

Results of the LCA – ENVIRONMENTAL IMPACTS:

NH/Armaflex 1 m³ / 62,5 kg/m³

Life cycle stages	A 1-A3	A 4-5		C1-4		D
	Product stage	Construction process stage		End-of-life stage		Benefits and loads beyond the system boundary
Declared life cycle stages (standard NF EN 15804)	A1-A3	A4	A5	C2	C4	D
GWP [kg CO ₂ -eq.]	307,494	4,628	57,503	0,286	159,851	-49,310
ODP [kg CFC11-eq.]	9,137E-09	1,904E-11	1,807E-10	1,177E-12	1,319E-09	-1,689E-08
AP [kg SO ₂ -eq.]	5,928E-01	1,189E-02	1,060E-02	7,349E-04	2,171E-01	-1,314E-01
EP [kg PO ₄ ³⁻ -eq.]	1,192E-01	2,935E-03	1,721E-03	1,814E-04	7,541E-03	-8,901E-03
POCP [kg ethene-eq.]	1,379E-01	-3,219E-03	1,608E-03	-1,989E-04	4,860E-03	-1,078E-02
ADPE(FR) [kg Sb-eq.]	1,05E-03	1,80E-07	1,15E-05	1,11E-08	6,81E-05	-4,93E-06
ADPF [MJ]	5,40E+03	6,38E+01	6,18E+01	3,94E+00	2,80E+02	-6,91E+02
Air pollution [m ³]	1,19E+04	1,46E+02	2,16E+02	9,03E+00	5,62E+03	-1,30E+03
Water pollution [m ³]	3,27E+02	7,41E-01	1,28E+01	4,58E-02	8,71E+02	-5,70E+00
Caption	GWP = Global warming potential; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential of land and water; EP = Eutrophication potential; POCP = Formation potential of tropospheric ozone photochemical oxidants; ADPE(FR) = Abiotic depletion potential for non-fossil resources according to NF EN 15804; ADPF = Abiotic depletion potential for fossil resources					

SH/Armaflex 1 m³ / 47,5 kg/m³

Life cycle stages	A 1-A3	A 4-5		C1-4		D
	Product stage	Construction process stage		End-of-life stage		Benefits and loads beyond the system boundary
Declared life cycle stages (standard NF EN 15804)	A1-A3	A4	A5	C2	C4	D
GWP [kg CO ₂ -eq.]	213,538	3,019	34,844	0,217	121,486	-36,722
ODP [kg CFC11-eq.]	1,025E-08	1,242E-11	1,630E-10	8,942E-13	1,002E-09	-1,258E-08
AP [kg SO ₂ -eq.]	9,711E-01	7,755E-03	1,306E-02	5,585E-04	1,650E-01	-9,786E-02
EP [kg PO ₄ ³⁻ -eq.]	9,684E-02	1,915E-03	1,326E-03	1,379E-04	5,731E-03	-6,629E-03
POCP [kg ethene-eq.]	4,388E-01	-2,099E-03	4,579E-03	-1,512E-04	3,693E-03	-8,027E-03
ADPE(FR) [kg Sb-eq.]	1,14E-03	1,17E-07	1,22E-05	8,44E-09	5,18E-05	-3,67E-06
ADPF [MJ]	3,90E+03	4,16E+01	4,44E+01	3,00E+00	2,13E+02	-5,14E+02
Air pollution [m ³]	2,76E+04	9,53E+01	3,47E+02	6,87E+00	4,27E+03	-9,68E+02
Water pollution [m ³]	1,33E+02	4,83E-01	8,44E+00	3,48E-02	6,62E+02	-4,25E+00
Caption	GWP = Global warming potential; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential of land and water; EP = Eutrophication potential; POCP = Formation potential of tropospheric ozone photochemical oxidants; ADPE(FR) = Abiotic depletion potential for non-fossil resources according to NF EN 15804; ADPF = Abiotic depletion potential for fossil resources					

HT/Armaflex 1 m³ / 75 kg/m³

Life cycle stages	A 1-A3	A 4-5		C1-4		D
	Product stage	Construction process stage		End-of-life stage		Benefits and loads beyond the system boundary
Declared life cycle stages (standard NF EN 15804)	A1-A3	A4	A5	C2	C4	D
GWP [kg CO ₂ -eq.]	309,211	5,113	58,448	0,343	191,821	-57,798
ODP [kg CFC11-eq.]	1,267E-08	2,103E-11	2,199E-10	1,412E-12	1,582E-09	-1,980E-08
AP [kg SO ₂ -eq.]	2,354E+00	1,314E-02	2,887E-02	8,819E-04	2,605E-01	-1,540E-01
EP [kg PO ₄ ³⁻ -eq.]	1,455E-01	3,243E-03	2,010E-03	2,177E-04	9,049E-03	-1,043E-02
POCP [kg ethene-eq.]	2,741E-01	-3,555E-03	2,992E-03	-2,387E-04	5,832E-03	-1,263E-02
ADPE(FR) [kg Sb-eq.]	1,38E-03	1,98E-07	1,50E-05	1,33E-08	8,17E-05	-5,78E-06
ADPF [MJ]	5,65E+03	7,05E+01	6,50E+01	4,73E+00	3,36E+02	-8,10E+02
Air pollution [m ³]	4,86E+04	1,61E+02	5,98E+02	1,08E+01	6,74E+03	-1,52E+03
Water pollution [m ³]	2,23E+02	8,19E-01	1,35E+01	5,50E-02	1,05E+03	-6,68E+00
Caption	GWP = Global warming potential; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential of land and water; EP = Eutrophication potential; POCP = Formation potential of tropospheric ozone photochemical oxidants; ADPE(FR) = Abiotic depletion potential for non-fossil resources according to NF EN 15804; ADPF = Abiotic depletion potential for fossil resources					

Armaflex Ultima 1 m³ / 57,5 kg/m³

Life cycle stages	A 1-A3	A 4-5		C1-4		D
	Product stage	Construction process stage		End-of-life stage		Benefits and loads beyond the system boundary
Declared life cycle stages (standard NF EN 15804)	A1-A3	A4	A5	C2	C4	D
GWP [kg CO ₂ -eq.]	232,710	3,792	41,888	0,263	147,063	-43,915
ODP [kg CFC11-eq.]	7,966E-09	1,560E-11	1,468E-10	1,082E-12	1,213E-09	-1,504E-08
AP [kg SO ₂ -eq.]	5,688E-01	9,743E-03	9,518E-03	6,761E-04	1,997E-01	-1,170E-01
EP [kg PO ₄ ³⁻ -eq.]	9,816E-02	2,405E-03	1,382E-03	1,669E-04	6,937E-03	-7,927E-03
POCP [kg ethene-eq.]	1,528E-01	-2,637E-03	1,705E-03	-1,830E-04	4,471E-03	-9,599E-03
ADPE(FR) [kg Sb-eq.]	2,01E-03	1,47E-07	2,11E-05	1,02E-08	6,27E-05	-4,39E-06
ADPF [MJ]	3,78E+03	5,23E+01	4,40E+01	3,63E+00	2,58E+02	-6,15E+02
Air pollution [m ³]	1,19E+04	1,20E+02	2,01E+02	8,31E+00	5,17E+03	-1,16E+03
Water pollution [m ³]	2,82E+02	6,07E-01	1,14E+01	4,21E-02	8,02E+02	-5,08E+00
Caption	GWP = Global warming potential; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential of land and water; EP = Eutrophication potential; POCP = Formation potential of tropospheric ozone photochemical oxidants; ADPE(FR) = Abiotic depletion potential for non-fossil resources according to NF EN 15804; ADPF = Abiotic depletion potential for fossil resources					

AF/Armaflex 1 m³ / 52,5 kg/m³

Life cycle stages	A 1-A3	A 4-5		C1-4		D
	Product stage	Construction process stage		End-of-life stage		Benefits and loads beyond the system boundary
Declared life cycle stages (standard NF EN 15804)	A1-A3	A4	A5	C2	C4	D
GWP [kg CO ₂ -eq.]	264,092	3,661	43,639	0,240	134,274	-40,853
ODP [kg CFC11-eq.]	1,061E-08	1,506E-11	1,727E-10	9,883E-13	1,108E-09	-1,400E-08
AP [kg SO ₂ -eq.]	1,307E+00	9,405E-03	1,702E-02	6,173E-04	1,823E-01	-1,089E-01
EP [kg PO ₄ ³⁻ -eq.]	1,165E-01	2,322E-03	1,548E-03	1,524E-04	6,334E-03	-7,374E-03
POCP [kg ethene-eq.]	2,481E-01	-2,546E-03	2,673E-03	-1,671E-04	4,082E-03	-8,930E-03
ADPE(FR) [kg Sb-eq.]	1,55E-03	1,42E-07	1,63E-05	9,32E-09	5,72E-05	-4,08E-06
ADPF [MJ]	4,58E+03	5,05E+01	5,09E+01	3,31E+00	2,35E+02	-5,72E+02
Air pollution [m ³]	2,91E+04	1,16E+02	3,74E+02	7,59E+00	4,72E+03	-1,08E+03
Water pollution [m ³]	2,02E+02	5,86E-01	9,95E+00	3,85E-02	7,32E+02	-4,72E+00
Caption	GWP = Global warming potential; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential of land and water; EP = Eutrophication potential; POCP = Formation potential of tropospheric ozone photochemical oxidants; ADPE(FR) = Abiotic depletion potential for non-fossil resources according to NF EN 15804; ADPF = Abiotic depletion potential for fossil resources					

AF/Armaflex Class O 1 m³ / 52,5 kg/m³

Life cycle stages	A 1-A3	A 4-5		C1-4		D
	Product stage	Construction process stage		End-of-life stage		Benefits and loads beyond the system boundary
Declared life cycle stages (standard NF EN 15804)	A1-A3	A4	A5	C2	C4	D
GWP [kg CO ₂ -eq.]	230,364	1,057	36,981	0,240	134,274	-41,176
ODP [kg CFC11-eq.]	1,007E-08	4,349E-12	1,688E-10	9,883E-13	1,108E-09	-1,411E-08
AP [kg SO ₂ -eq.]	1,275E+00	2,716E-03	1,678E-02	6,173E-04	1,823E-01	-1,097E-01
EP [kg PO ₄ ³⁻ -eq.]	1,082E-01	6,706E-04	1,457E-03	1,524E-04	6,334E-03	-7,433E-03
POCP [kg ethene-eq.]	1,313E+00	-7,352E-04	1,345E-02	-1,671E-04	4,082E-03	-9,001E-03
ADPE(FR) [kg Sb-eq.]	1,44E-03	4,10E-08	1,53E-05	9,32E-09	5,72E-05	-4,11E-06
ADPF [MJ]	4,30E+03	1,46E+01	4,80E+01	3,31E+00	2,35E+02	-5,77E+02
Air pollution [m ³]	5,50E+04	3,34E+01	6,40E+02	7,59E+00	4,72E+03	-1,09E+03
Water pollution [m ³]	8,45E+01	1,69E-01	9,40E+00	3,85E-02	7,32E+02	-4,76E+00
Caption	GWP = Global warming potential; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential of land and water; EP = Eutrophication potential; POCP = Formation potential of tropospheric ozone photochemical oxidants; ADPE(FR) = Abiotic depletion potential for non-fossil resources according to NF EN 15804; ADPF = Abiotic depletion potential for fossil resources					

Results of the LCA – RESOURCE USE:

NH/Armaflex 1 m³ / 62,5 kg/m³

Life cycle stages	A 1-A3	A 4-5		C1-4		D
	Product stage	Construction process stage		End-of-life stage		Benefits and loads beyond the system boundary
Declared life cycle stages (standard DIN EN 15804)	A1-A3	A4	A5	C2	C4	D
PE total [MJ]	7388.568	67.607	83.720	4.178	350.416	-928.036
PERE [MJ]	1627.093	-	-	-	-	-
PERM [MJ]	0	-	-	-	-	-
PERT [MJ]	1627.093	3.574	17.270	0.221	36.469	-85.211
PENRE [MJ]	4736.475	-	-	-	-	-
PENRM [MJ]	1025.000	-	-	-	-	-
PENRT [MJ]	5761.475	64.033	66.450	3.957	313.947	-842.826
SM [kg]	45.026	0	0.455	0	0	0
RSF [MJ]	-	-	-	-	-	-
NRSF [MJ]	-	-	-	-	-	-
FW [kg]	1654.506	6.273	67.878	0.388	330.871	-172.017
Caption	PE total = Total use of primary energy resources (=PERT+PENRT); PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water					

SH/Armaflex 1 m³ / 47,5 kg/m³

Life cycle stages	A 1-A3	A 4-5		C1-4		D
	Product stage	Construction process stage		End-of-life stage		Benefits and loads beyond the system boundary
Declared life cycle stages (standard DIN EN 15804)	A1-A3	A4	A5	C2	C4	D
PE total [MJ]	5199.792	44.093	58.847	3.175	266.316	-691.107
PERE [MJ]	1016.805	-	-	-	-	-
PERM [MJ]	0	-	-	-	-	-
PERT [MJ]	1016.805	2.331	10.856	0.168	27.717	-63.449
PENRE [MJ]	3313.737	-	-	-	-	-
PENRM [MJ]	869.250	-	-	-	-	-
PENRT [MJ]	4182.987	41.762	47.991	3.008	238.599	-627.658
SM [kg]	25.188	0	0.254	0	0	0
RSF [MJ]	-	-	-	-	-	-
NRSF [MJ]	-	-	-	-	-	-
FW [kg]	1746.481	4.091	51.614	0.295	251.462	-128.086
Caption	PE total = Total use of primary energy resources (=PERT+PENRT); PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water					

HT/Armaflex 1 m³ / 75 kg/m³

Life cycle stages	A 1-A3	A 4-5		C1-4		D
	Product stage	Construction process stage		End-of-life stage		Benefits and loads beyond the system boundary
Declared life cycle stages (standard DIN EN 15804)	A1-A3	A4	A5	C2	C4	D
PE total [MJ]	7643.700	74.682	87.126	5.014	420.499	-1087.772
PERE [MJ]	1628.272	-	-	-	-	-
PERM [MJ]	0	-	-	-	-	-
PERT [MJ]	1628.272	3.948	17.364	0.265	43.763	-99.864
PENRE [MJ]	4650.428	-	-	-	-	-
PENRM [MJ]	1365.000	-	-	-	-	-
PENRT [MJ]	6015.428	70.734	69.762	4.749	376.736	-987.907
SM [kg]	45.541	0	0.460	0	0	0
RSF [MJ]	-	-	-	-	-	-
NRSF [MJ]	-	-	-	-	-	-
FW [kg]	1945.354	6.929	72.030	0.465	397.045	-201.599
Caption	PE total = Total use of primary energy resources (=PERT+PENRT); PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water					

Armaflex Ultima 1 m³ / 57,5 kg/m³

Life cycle stages	A 1-A3	A 4-5		C1-4		D
	Product stage	Construction process stage		End-of-life stage		Benefits and loads beyond the system boundary
Declared life cycle stages (standard DIN EN 15804)	A1-A3	A4	A5	C2	C4	D
PE total [MJ]	5316.377	55.392	61.018	3.844	322.383	-826.477
PERE [MJ]	1228.254	-	-	-	-	-
PERM [MJ]	0	-	-	-	-	-
PERT [MJ]	1228.254	2.928	13.085	0.203	33.552	-75.872
PENRE [MJ]	2236.623	-	-	-	-	-
PENRM [MJ]	1851.500	-	-	-	-	-
PENRT [MJ]	4088.123	52.464	47.933	3.641	288.831	-750.605
SM [kg]	32.459	0	0.328	0	0	0
RSF [MJ]	-	-	-	-	-	-
NRSF [MJ]	-	-	-	-	-	-
FW [kg]	1859.118	5.140	56.330	0.357	304.401	-153.165
Caption	PE total = Total use of primary energy resources (=PERT+PENRT); PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water					

AF/Armaflex 1 m³ / 52,5 kg/m³

Life cycle stages	A 1-A3	A 4-5		C1-4		D
	Product stage	Construction process stage		End-of-life stage		Benefits and loads beyond the system boundary
Declared life cycle stages (standard DIN EN 15804)	A1-A3	A4	A5	C2	C4	D
PE total [MJ]	6186.695	53.475	68.476	3.510	294.349	-768.861
PERE [MJ]	1268.847	-	-	-	-	-
PERM [MJ]	0	-	-	-	-	-
PERT [MJ]	1268.847	2.827	13.380	0.186	30.634	-70.590
PENRE [MJ]	4020.098	-	-	-	-	-
PENRM [MJ]	897.750	-	-	-	-	-
PENRT [MJ]	4917.848	50.648	55.096	3.324	263.715	-698.271
SM [kg]	33.613	0	0.340	0	0	0
RSF [MJ]	-	-	-	-	-	-
NRSF [MJ]	-	-	-	-	-	-
FW [kg]	1959.900	4.962	58.482	0.326	277.932	-142.502
Caption	PE total = Total use of primary energy resources (=PERT+PENRT); PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water					

AF/Armaflex Class O 1 m³ / 52,5 kg/m³

Life cycle stages	A 1-A3	A 4-5		C1-4		D
	Product stage	Construction process stage		End-of-life stage		Benefits and loads beyond the system boundary
Declared life cycle stages (standard DIN EN 15804)	A1-A3	A4	A5	C2	C4	D
PE total [MJ]	5616.149	15.444	62.675	3.510	294.349	-774.953
PERE [MJ]	975.119	-	-	-	-	-
PERM [MJ]	0	-	-	-	-	-
PERT [MJ]	975.119	0.816	10.428	0.186	30.634	-71.157
PENRE [MJ]	3743.281	-	-	-	-	-
PENRM [MJ]	897.750	-	-	-	-	-
PENRT [MJ]	4641.031	14.627	52.247	3.324	263.715	-703.796
SM [kg]	24.423	0	0.247	0	0	0
RSF [MJ]	-	-	-	-	-	-
NRSF [MJ]	-	-	-	-	-	-
FW [kg]	1772.929	1.433	57.712	0.326	277.932	-143.645
Caption	PE total = Total use of primary energy resources (=PERT+PENRT); PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water					

Results of the LCA – OUTPUT FLOWS AND WASTE CATEGORIES:

NH/Armaflex 1 m³ / 62,5 kg/m³

Life cycle stages	A 1-A3	A 4-5		C1-4		D
	Product stage	Construction process stage		End-of-life stage		Benefits and loads beyond the system boundary
Declared life cycle stages (standard DIN EN 15804)	A1-A3	A4	A5	C2	C4	D
HWD [kg]	1.741E-03	3.038E-05	2.057E-05	1.878E-06	1.371E-04	-2.429E-04
NHWD [kg]	3.391E+01	9.116E-03	1.426E+00	5.634E-04	9.887E+01	-2.520E-01
RWD [kg]	1.432E-01	8.749E-05	1.867E-03	5.407E-06	1.340E-02	-6.058E-02
CRU [kg]	-	-	-	-	-	-
MFR [kg]	1.689	0	53.815	0	0	-
MER [kg]	-	-	-	-	-	-
EEE [MJ]	0	0	26.389	0	141.550	-
EET [MJ]	0	0	61.429	0	333.925	-
Caption	HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EE = Exported energy per energy carrier					

SH/Armaflex 1 m³ / 47,5 kg/m³

Life cycle stages	A 1-A3	A 4-5		C1-4		D
	Product stage	Construction process stage		End-of-life stage		Benefits and loads beyond the system boundary
Declared life cycle stages (standard DIN EN 15804)	A1-A3	A4	A5	C2	C4	D
HWD [kg]	1.115E-02	1.981E-05	1.147E-04	1.427E-06	1.042E-04	-1.809E-04
NHWD [kg]	1.599E+01	5.945E-03	9.721E-01	4.282E-04	7.514E+01	-1.877E-01
RWD [kg]	1.136E-01	5.706E-05	1.438E-03	4.109E-06	1.018E-02	-4.511E-02
CRU [kg]	-	-	-	-	-	-
MFR [kg]	0.659	0	30.102	0	0	-
MER [kg]	-	-	-	-	-	-
EEE [MJ]	0	0	17.471	0	107.578	-
EET [MJ]	0	0	40.674	0	253.783	-
Caption	HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EE = Exported energy per energy carrier					

HT/Armaflex 1 m³ / 75 kg/m³

Life cycle stages	A 1-A3	A 4-5		C1-4		D
	Product stage	Construction process stage		End-of-life stage		Benefits and loads beyond the system boundary
Declared life cycle stages (standard DIN EN 15804)	A1-A3	A4	A5	C2	C4	D
HWD [kg]	2.969E-02	3.356E-05	3.032E-04	2.253E-06	1.646E-04	-2.847E-04
NHWD [kg]	2.945E+01	1.007E-02	1.580E+00	6.761E-04	1.186E+02	-2.954E-01
RWD [kg]	1.447E-01	9.665E-05	1.912E-03	6.489E-06	1.608E-02	-7.100E-02
CRU [kg]	-	-	-	-	-	-
MFR [kg]	1.314	0	54.426	0	0	-
MER [kg]	-	-	-	-	-	-
EEE [MJ]	0	0	26.958	0	169.859	-
EET [MJ]	0	0	62.760	0	400.710	-
Caption	HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EE = Exported energy per energy carrier					

Armaflex Ultima 1 m³ / 57,5 kg/m³

Life cycle stages	A 1-A3	A 4-5		C1-4		D
	Product stage	Construction process stage		End-of-life stage		Benefits and loads beyond the system boundary
Declared life cycle stages (standard DIN EN 15804)	A1-A3	A4	A5	C2	C4	D
HWD [kg]	1.321E-03	2.489E-05	1.580E-05	1.727E-06	1.262E-04	-2.163E-04
NHWD [kg]	2.917E+01	7.469E-03	1.272E+00	5.183E-04	9.096E+01	-2.244E-01
RWD [kg]	1.209E-01	7.168E-05	1.551E-03	4.975E-06	1.233E-02	-5.394E-02
CRU [kg]	-	-	-	-	-	-
MFR [kg]	0.000	0	38.783	0	0	-
MER [kg]	-	-	-	-	-	-
EEE [MJ]	0	0	19.306	0	130.226	-
EET [MJ]	0	0	44.949	0	307.211	-
Caption	HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EE = Exported energy per energy carrier					

AF/Armaflex 1 m³ / 52,5 kg/m³

Life cycle stages	A 1-A3	A 4-5		C1-4		D
	Product stage	Construction process stage		End-of-life stage		Benefits and loads beyond the system boundary
Declared life cycle stages (standard DIN EN 15804)	A1-A3	A4	A5	C2	C4	D
HWD [kg]	1.822E-02	2.403E-05	1.902E-04	1.577E-06	1.152E-04	-2.012E-04
NHWD [kg]	2.456E+01	7.210E-03	1.154E+00	4.732E-04	8.305E+01	-2.088E-01
RWD [kg]	1.342E-01	6.920E-05	1.651E-03	4.542E-06	1.126E-02	-5.018E-02
CRU [kg]	-	-	-	-	-	-
MFR [kg]	0.892	0	40.171	0	0	-
MER [kg]	-	-	-	-	-	-
EEE [MJ]	0	0	20.221	0	118.902	-
EET [MJ]	0	0	47.073	0	280.497	-
Caption	HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EE = Exported energy per energy carrier					

AF/Armaflex Class O 1 m³ / 52,5 kg/m³

Life cycle stages	A 1-A3	A 4-5		C1-4		D
	Product stage	Construction process stage		End-of-life stage		Benefits and loads beyond the system boundary
Declared life cycle stages (standard DIN EN 15804)	A1-A3	A4	A5	C2	C4	D
HWD [kg]	1.702E-02	6.940E-06	1.778E-04	1.577E-06	1.152E-04	-2.028E-04
NHWD [kg]	1.182E+01	2.082E-03	1.100E+00	4.732E-04	8.305E+01	-2.105E-01
RWD [kg]	1.378E-01	1.999E-05	1.700E-03	4.542E-06	1.126E-02	-5.059E-02
CRU [kg]	-	-	-	-	-	-
MFR [kg]	2.768	0	29.210	0	0	-
MER [kg]	-	-	-	-	-	-
EEE [MJ]	0	0	21.339	0	118.902	-
EET [MJ]	0	0	49.632	0	280.497	-
Caption	HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EE = Exported energy per energy carrier					

2.4.1 : Knowledge of impact on interior air-quality / 2.4.2 : Choice of products for a better interior air-quality

Product information for the declared product within this section:

Item	Value
Test institute / organization (Name)	Eurofins Product Testing A/S
Test method applied	ISO 16000-3/6/9/11 – loading factor 0.5 m ² /m ³
Applicable regulation/Criteria	AgBB
Regulation requirements met	yes

Armaflex is fiber-free, non-eroding, formaldehyde-free and low-VOC

HQE Cible n°3: Construction with low environmental impact

3.1 Optimisation of waste management at the construction site

3.1.2. Reduction of construction waste at the source – Is there a strategy to produce less waste in the construction stage (e.g. prefab wall and flooring systems, etc.)? YES/NO

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